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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/419,720 | 10/14/1999 | IGOR A. KRICHTAFOVITCH | PFUHRI | 1693 |

7590

04/10/2002

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EXAMINER

ALEMU, EPHREM

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 04/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/419,720

Applicant(s)

KRICHTAFOVITCH ET AL

Examiner

Ephrem Alemu

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 16, 18 and 26 are objected to because of the following informalities: In claims 16, 18, and 26, the recitation of the limitation "the voltage" in line 2, respectively makes the claim being indefinite because there is insufficient antecedent basis for this limitation in each claim. .
Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gourdine (US 3,582,694) in view of Torok et al. (US 5,077,500).

Re claims 1, 2, 3, 5, 6, 8-10, 12, 13, and 43-45 Gourdine discloses an electrogasdynamic system comprising plurality of electrostatic fluid accelerators (electrogasdynamic (EGD) stage) that are located downstream, with respect to the desired direction of fluid flow, from the preceding electrostatic fluid accelerator (Figs. 1, 3; Col.3, lines 62- 65); and

at least one collecting electrode located between at least one pair of the electrostatic fluid accelerators (22) (Col. 4, lines 1-11); wherein each electrostatic fluid accelerators comprises: a multiplicity of closely spaced corona electrodes (18);

at least one exciting electrode (attractor electrode, 20) being located between the corona electrodes (18); and

a high voltage power source for supplying power to the electrodes (49) (Fig. 1; Col. 5, line 37- Col. 6, line 16; wherein the voltage between the corona electrodes and the exciting electrodes is maintained between the corona onset voltage and the breakdown voltage).

However, Gourdine does not show that at least one exciting electrode (attractor electrode, 20) being asymmetrically located between the corona electrodes (18).

In the same field of endeavor, Torok teaches of placing at least one exciting electrode (i.e., conductive surface 5) asymmetrically located between the corona electrodes (K) for the purpose of obtaining more uniform distribution of corona discharge (Fig. 5, Col. 6, lines 12-52).

It would have been obvious to one having ordinary skill of artisan at the time the invention was made to modify the electrostatic fluid accelerators (electrostatic (EGD) stage) of Gourdine's system by asymmetrically locating at least one exciting electrode (attractor electrode, 20) between the corona electrodes (18) as taught by Torok for the purpose obtaining more uniform discharge (see Torok patent, Col. 6, lines 45-52).

Re claims 4, 7 and 11, Gourdine further shows that the exciting electrode is a plate that extends downstream with respect to the desired direction of fluid flow (Fig. 1, Col. 3, line 46-48).

Re claims 14-18, 20, 21, 23, 24-26, 28, 29, 31-34, 36-38, and 40-42, Gourdine discloses an electrostatic system comprising plurality of electrostatic fluid accelerators (electrostatic (EGD) stage) that are located downstream, with respect to the desired direction of fluid flow, from the preceding electrostatic fluid accelerator (Figs. 1, 3; Col. 3, lines 62- 65);

at least one collecting electrode located between at least one pair of the electrostatic fluid accelerators (22) (Col. 4, lines 1-11); wherein each electrostatic fluid accelerators comprises: a multiplicity of closely spaced corona electrodes (150) (Fig. 8);

at least one exciting electrode (attractor electrode, 149) asymmetrically located between the corona electrodes (Fig. 8);

at least one accelerating electrode (second attractor electrode, 153) (Fig. 8; Col. 17, line 69- Col. 18, line 23; wherein the accelerating electrode is either attracting or repelling electrode); and

a voltage source for supplying power to the electrodes (154) (Fig. 8; Col. 5, line 37- Col. 6, line 16; wherein the voltage between the corona electrodes and the exciting electrodes is maintained between the corona onset voltage and the breakdown voltage).

However, Gourdine does not show that at least one exciting electrode (attractor electrode, 149) being asymmetrically located between the corona electrodes (18).

In the same field of endeavor, Torok teaches of placing at least one exciting electrode (i.e., conductive surface 5) asymmetrically located between the corona electrodes (K) for the purpose of obtaining more uniform distribution of corona discharge (Fig. 5, Col. 6, lines 12-52).

It would have been obvious to one having ordinary skill of artisan at the time the invention was made to modify the electrostatic fluid accelerators (electrogasdynamic (EGD) stage) of Gourdine's system by asymmetrically locating at least one exciting electrode (attractor electrode, 20) between the corona electrodes (18) as taught by Torok for the purpose obtaining more uniform discharge (see Torok patent, Col. 6, lines 45-52)

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Re claims 19, 22, 27, 30, 35 and 39, Gourdine further shows that the exciting electrode is a plate that extends downstream with respect to the desired direction of fluid flow (Fig. 1, Col. 3, line 46-48).

Response to Arguments

4. Applicant's arguments with respect to claims 1-45 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ephrem Alemu whose telephone number is (703) 306-5983. The examiner can normally be reached on M-F Flex hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don K Wong can be reached on (703) 308-4856. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


Don Wong
Supervisory Patent Examiner
Technology Center 2800

EA
4-05-02